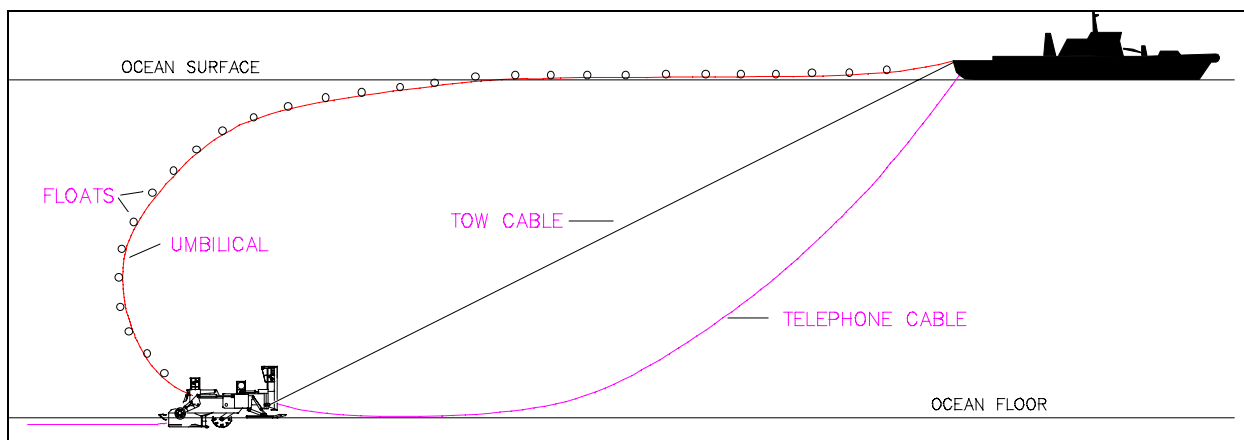


Although the cable installation proceeds at a slow rate, the time required for installation of the cable in the sanctuary would be expected to be minimal. If the cable ship moves at approximately 0.5 to 1.0 nautical mile (knot) (a knot is slightly more than 1 mile per hour) and the proposed length of the route in the sanctuary is approximately 19.49 km, it is expected that the cable could be installed through the sanctuary in less than two days. Further, cable installation activities would be coordinated with all interested parties to ensure minimal effects during the installation phase (Earth Tech 1999).

To minimize potential effects to navigation, the fishing industry, other maritime activities, and environmental resources, the undersea cable would be installed approximately 1.5 m beneath the sea bed. To install the cable beneath the sea bed, the applicant would use the “Sea Plow VII,” an unmanned towed vehicle that is controlled from a cable ship. The Sea Plow VII operates on the ocean floor to bury telephone cables, small flexible pipe, and associated line accessories, such as repeaters and splice boxes, to depths of as much as 1,500 m. Figure 2-2 illustrates a typical burial configuration that uses the Sea Plow VII burial vehicle towed by a cable ship.

Figure 2-2: Sea Plow VII Burial Plowing Configuration (Earth Tech 1999)



State-of-the-art navigation technology enables the plow to follow the cable route to an extremely high degree of accuracy. The plow process would displace a shallow wedge of the sea bed temporarily (approximately 1.0 m wide by 1.5 m deep) and install the cable within the trench. The displaced soil then would be returned to its original location. The minimal amount of soil disturbance required for installation and the immediate restoration of the disturbed area would limit effects on the marine environment. The process does not involve activities typically associated with dredging, such as suspension, side-casting, or permanent removal of sediment (Earth Tech 1999).

Sea Plow VII is towed with a steel tow wire by the support ship from which it is launched. A traction winch is used to control payout and retrieval, as well as tension on the tow wire. The Sea Plow VII vehicle is controlled from a console located in the control van on deck, to which the vehicle is connected by a fiber-optic umbilical cable. Launching is accomplished by use of a hydraulically operated A-frame on the stern of the support ship. Payout and retrieval of the umbilical cable is accomplished by use of a separate dedicated winch. Cable payout is controlled by a linear cable engine or a drum cable engine.

Sea Plow VII is equipped with hydraulically adjusted front skids, adjustable rear wheels and stabilizers, a variable-depth plowshare, an adjustable cutting disc, a steering mechanism, an adjustable slack accumulator, as many as three monochrome video surveillance cameras with lighting, obstacle avoidance